

# **2013 Governor's Energy Development Summit Advancing Our Energy Future**

**Conventional Breakout Session  
January 10, 2013**

## **The New Scenario for Oil and Gas Production in America: How Times Have Changed**

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# Famous Quotes

**“Everything you know about Peak Oil is wrong. For every barrel of oil produced in the world from 2007 to 2009, 1.6 barrels of new reserves were added.” ----- NY Times, Jan 2012**

**“North America could be energy independent in the next 15 to 20 years; what a change since 2008..... 102 countries are now sources of supply ! [And,] we have yet to talk about Enhanced Oil Recovery, [methane] Hydrates, and [ultra deep] Offshore.” ----- Daniel Yergin, Author of *The Prize* and *The Quest*, 2012**

**“We can now produce new found riches in natural gas and oil while simultaneously building a bridge to a low-carbon energy economy” ----- Wall Street Journal, March 2012**

**“We will run out of air before we run out of oil.” ----- Sid Green, Light-Hearted Comment, 1988 (before Climate Change was discussed)**

**“Speed of innovation is very much faster in last ten years..... More innovation [occurs] in this Country than in the rest of the world combined.” ----- Tom Freidman & Bill Gates, NY Times Article, March 2012**

# Changes in Last ~Three Years

1. Deep Horizon Oil Spill
2. Japan Earthquake
3. Arab Spring
4. Shale Gas Production from Hero-to-Villain
5. Tight Shale Liquids Production
6. Acceptance that North America is heading toward supply independence

# **Challenges for Oil & Gas Production**

**Access – Resource Ownership and Political Stability**

**Execution – Often in Difficult Environments**

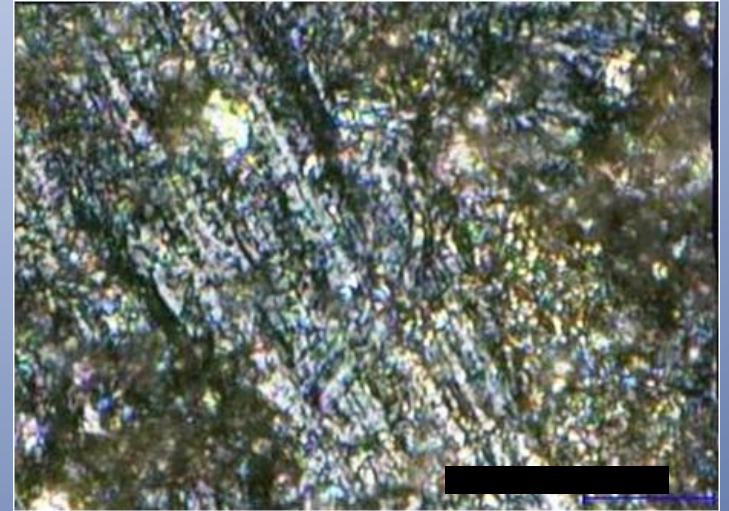
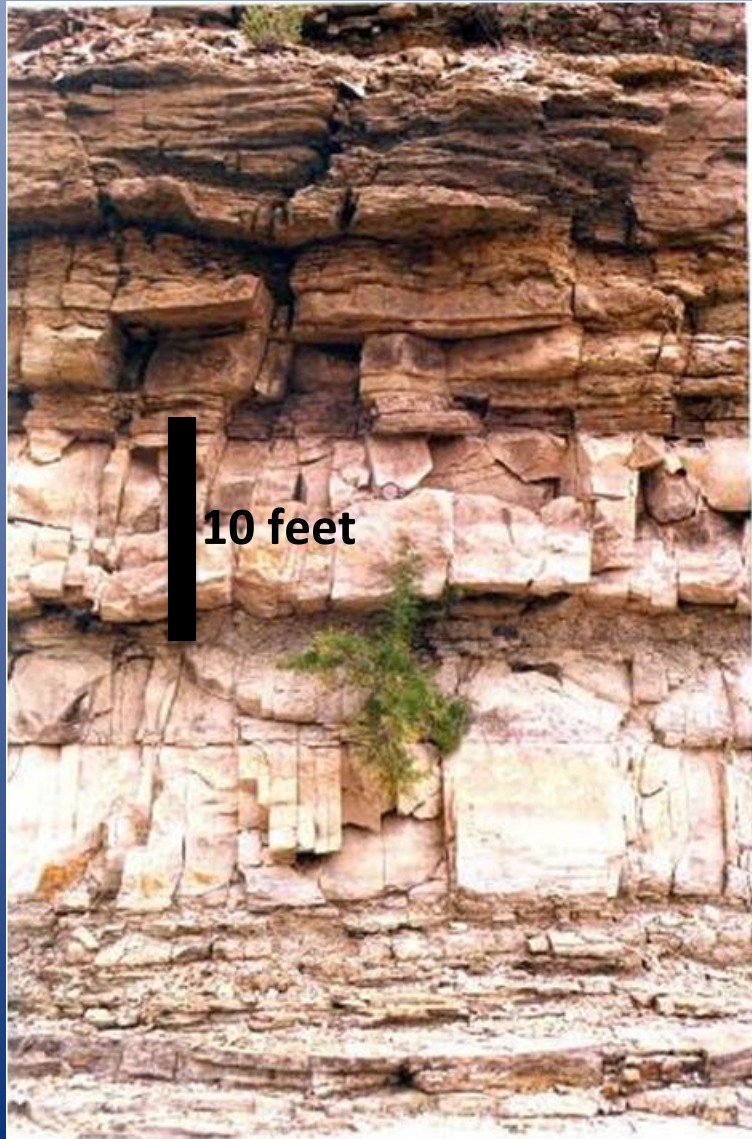
**People – Proper Skills and Acceptance of Remote Areas**

**Technology – For Acceptable Safety and Environmental,  
and Economic Considerations**

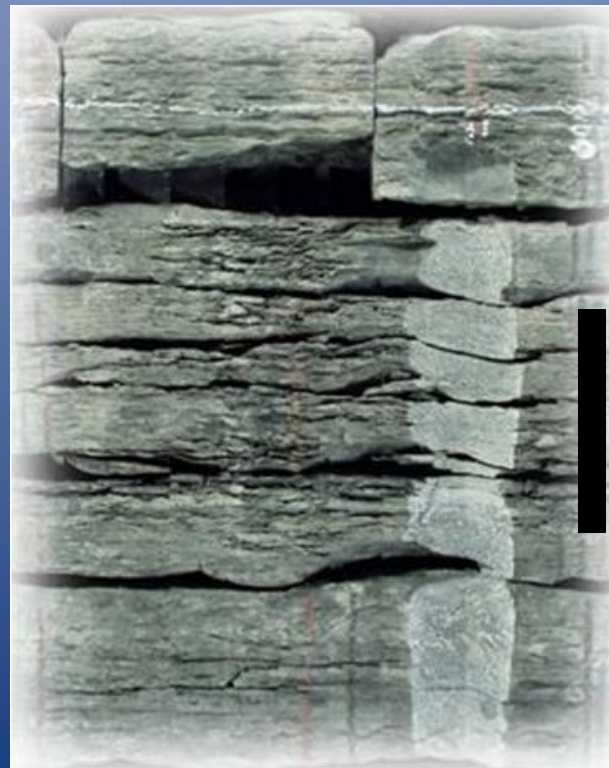
**Uncertainty of Product Value – Demand / Price cycles**



# Complex Formations



10 microns



10 inches

# Deep Water

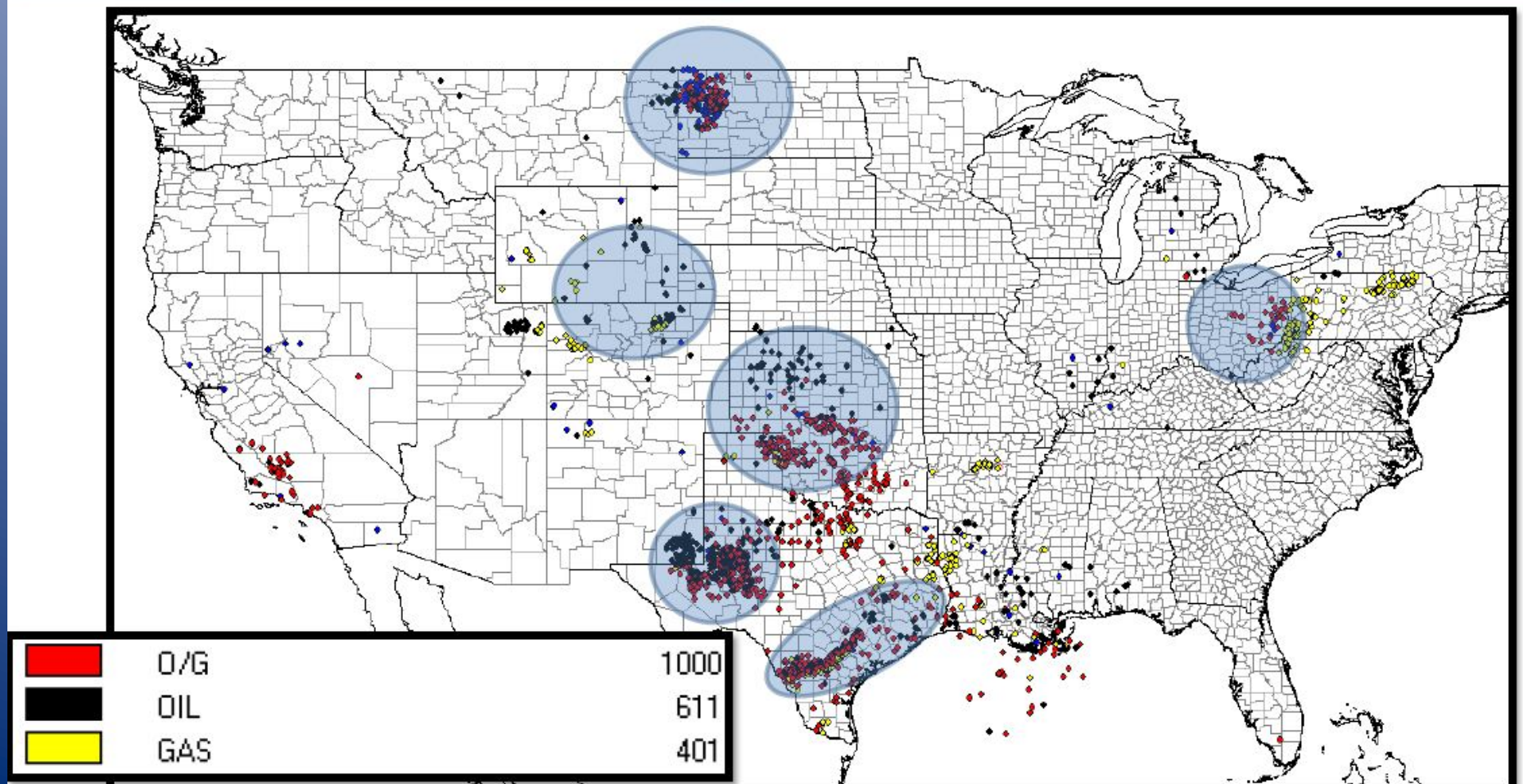
- Drilling and completing in 10,000 feet of water
- Approaching 30,000 feet well depths below mud line
- Ultra high pressures and temperatures





# Drilling Activity in US

Courtesy of Dr. Trisha Curtis, EPRINC, June 2012



# Production Costs

## Lifting costs (\$ / Barrel)

- Best Reservoirs in Persian Gulf “easy oil” ----- \$10
- Shallow Offshore ----- \$20
- Deep Water ----- \$30
- Tight Shales ----- \$50
- Ultra Deep Water ----- \$60
- Oil Sands ----- \$60





# Conclusions

- Energy continues primarily oil, gas, and coal and is big, really big
- The world is not running out of fossil energy, and fossil energy is still relatively cheap
- The world is an intertwined economic entity, and energy is critical to economic development and standard of living—there are haves and have not's
- Oil & Gas are commodities, a world commodity
- Production of oil and gas involves different interests and offers different benefits
- North America is headed toward supply independence, and how the US uses this independence is not clear

# Questions

